


PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference BIF116131 ON/M		FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/IB2004/003883		International filing date (day/month/year) 10.11.2004	Priority date (day/month/year) 14.11.2003	
International Patent Classification (IPC) or national classification and IPC H04L29/08, G06F17/30, H04N7/24				
Applicant CANON KABUSHIKI KAISHA				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 12 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 4 sheets, as follows:</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 09.09.2005		Date of completion of this report 13.12.2005		
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Jeampierre, G Telephone No. +49 89 2399-7283		



**INTERNATIONAL PRELIMINARY REPORT
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International application No.
PCT/IB2004/003883

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-35 as originally filed

Claims, Numbers

1-19 received on 12.09.2005 with letter of 09.09.2005

Drawings, Sheets

1/20-20/20 as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing *(specify):*
 - ☐ any table(s) related to sequence listing *(specify):*
4. ☒ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☒ the claims, Nos. 3(part),4(part),5(part),6,7,13(part),14(part),16(part)
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing *(specify):*
 - ☐ any table(s) related to sequence listing *(specify):*

* If item 4 applies, some or all of these sheets may be marked "superseded."

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 13,16,19

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 13,16,19 are so unclear that no meaningful opinion could be formed (*specify*):

see separate sheet

☒ the claims, or said claims Nos. 13,16,19 are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the said claims Nos.

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.

☐ See separate sheet for further details

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Box No. IV Lack of unity of invention

1. ☐ In response to the invitation to restrict or pay additional fees, the applicant has:
- ☐ restricted the claims.
 - ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ neither restricted nor paid additional fees.
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☒ all parts.
 - ☐ the parts relating to claims Nos. .

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-11,14,17
	No: Claims	12,15,18
Inventive step (IS)	Yes: Claims	1-11,14,17
	No: Claims	12,15,18
Industrial applicability (IA)	Yes: Claims	1-12,14-15,17-18
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item I

Basis of the report

The amendments introduce matter extending beyond the content of the application as originally filed (Articles 19(2) and 34(2)(b) PCT):

1. The wording of newly filed **claim 3** "comparing means for comparing a first thumbnail data item and a second thumbnail data item, wherein the first thumbnail data item is in a first station and the second thumbnail data item is in a second station" includes the case where the comparison is done remotely by the center station, without receiving the thumbnails data items. Since this case is not disclosed in the application as originally filed, this amendment is not allowable. In the application as originally filed, the first and second thumbnail data items compared are those firstly received by the center station (see e.g. page 23, lines 1-3 of the application as originally filed).

The same objection applies to newly filed **claim 14**.

2. The wording of newly filed **claim 4** "deriving means for deriving a first signature... from the second thumbnail data item" includes e.g. the case where the means simply obtain the signature from the thumbnail to which it is e.g. appended, without having to calculate it. Since this particular embodiment is not disclosed in the application as originally filed, which only discloses "calculating means for calculating signatures of the thumbnail data items" (see e.g. originally filed claim 1), this amendment is not allowable.

The same objection applies to newly filed **claims 5, 6 and 7**.

3. According to newly filed **claim 6**, the deriving means derives the signature "by referencing a table". This way of calculating the signature is not disclosed in the application as originally filed.
4. According to newly filed **claim 7**, the comparing means of claim 3 compare the thumbnail data items based on a difference and a threshold calculated from the thumbnail data items. This way of comparison of the thumbnail data items is not

disclosed in the application as originally filed according to which only the signatures of the thumbnail data items are compared based on a difference and a threshold calculated from the thumbnail data items (see e.g. claims 2 and 5 as originally filed).

5. According to newly filed **claim 13**, the original receiving means receive, from a center station, information for accessing the original data item corresponding to a first thumbnail data item according to a result of the comparison between the first thumbnail data item and the second thumbnail data item. This includes e.g. the case where the terms "according to..." do not relate to the information but to the action of receiving and the comparison is carried out on the claimed station. Since this case is not disclosed in the original application, which only discloses that the comparison is carried out on the center station, such an amendment is not allowable.

The same objection applies to newly filed **claim 16**.

All these unallowable amended technical features are not taken into consideration for the purpose of the examination (see section V).

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

See section I, point 5 and section VIII, points 1 and 2.

Re Item IV

Lack of unity of invention

This Authority considers that there are two potential inventions covered by the claims indicated as follows:

- I: Claims 1-11, 13-14, 16-17, 19
- II: Claims 12, 15, 18

This opinion is based on the following reasons:

The common feature of the two groups of potential inventions, i.e. the transfer of thumbnail data, is well known in the prior art of data networks and is not considered as representing a special technical feature in the meaning of Rule 13.2 PCT.

The potential remaining special technical features of these different sets of potential inventions are not the same. They are not corresponding either since they are based on different concepts:

Group 1, claims 1-11, 13-14, 16-17, 19:

Group 1 solves the problem of saving bandwidth in a client-server network for sharing a digital document and to reduce the consumption of resources on the client side. The problem is solved in that information for accessing original data is determined on the server according to a result of a comparison between first thumbnail data and second thumbnail data.

Group 2, claims 12, 15, 18:

Group 2 solves the problem of accessing original data of a digital document. The problem is solved in that the requesting station sends an access request based on thumbnail data received from the sharing station.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

D1: EP-A-1 215 876 (CANON KK) 19 June 2002 (2002-06-19)

D2: US 2003/011683 A1 (YAMASAKI FUMITOMO ET AL) 16 January 2003 (2003-01-16)

D3: US 2003/063771 A1 (MORRIS ROBERT PAUL ET AL) 3 April 2003 (2003-04-03)

D4: MICHAEL J. SWAIN: "Interactive Indexing into Image Databases" INTERNET ARTICLE, [Online] 1993, pages 1-10, XP002286434 Retrieved from the Internet: URL:<http://citeseer.ist.psu.edu/cache/pape>

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International application No.

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rs/cs/3182/http:zSzzSzwww.cs.uchicago.eduz Sz~swainzSzpubszSzspie93-
image-db.pdf/swai n93interactive.pdf> [retrieved on 2004-06-29]

D5: STONE H S: "Fourier-wavelet techniques in image searching" CIRCUITS AND
SYSTEMS, 1997. ISCAS '97., PROCEEDINGS OF 1997 IEEE
INTERNATIONAL SYMPOSIUM ON HONG KONG 9-12 JUNE 1997, NEW
YORK, NY, USA, IEEE, US, 9 June 1997 (1997-06-09), pages 1472-1475,
XP010236364 ISBN: 0-7803-3583-X

2. The subject-matter of **independent claim 15** is not new in the sense of Article 33(2) PCT.
- 2.1 D2 discloses a method of controlling a station capable of sharing a digital document in a communication network (figures 1, 19 and 21) in terms of **claim 15**, comprising the following steps:
 - i) generating an original data item (paragraphs 11, 12, 55);
 - ii) generating a thumbnail data item from the generated original data item (paragraphs 11, 12, 55);
 - iii) transmitting the thumbnail data item to another station (figure 19 and paragraphs 11, 12, 57, 142); and
 - iv) receiving an access request from said other station to the original data item based on the thumbnail data item (figures 21 and paragraphs 11, 12, 57, 161).
3. The subject-matter of independent **claims 12 and 18** corresponds in terms of device and computer program features to that of claim 15. The above objections (Article 33(2) PCT), therefore, also apply, mutatis mutandis, to independent **claims 12 and 18**.
4. The subject-matter of **independent claim 1** appears to be new and inventive (Articles 33(2) and 33(3) PCT).
- 4.1 D1, which is considered to be the closest prior art, discloses a digital document system in which a digital document in a communication network is shared between a plurality of stations, in terms of **claim 1**, said system comprising:

- a first station having a first thumbnail data item and a corresponding original data item;
 - a second station having a second thumbnail data item; and
 - a center station comprising:
 - transmitting means for transmitting information for accessing the original data item to the second station
- 4.2 Claim 1 differs from the disclosure of D1 in that the center station also comprises comparing means for comparing the first thumbnail data item and the second thumbnail data item and that the transmission of information is carried out according to a result of the comparison. In D1, the determination of the information is based on the discrimination data transmitted together with the second thumbnail data item.
- 4.3 The problem to be solved by the present invention may therefore be regarded as how to save bandwidth in a client-server network for sharing a digital document and to reduce the consumption of resources on the client side.
- 4.4 The problem is solved by the above identified feature of claim 1 not disclosed in D1.
- 4.5 The available prior art neither discloses nor suggests the solution as specified in the independent claim 1.

In D1, the determination of the information is based on the discrimination data transmitted together with the second thumbnail data item. In a preferred embodiment, the discrimination data includes the telephone number of the client and data on the data and time of photography of the image. D1 mentions that "any other data may be used if it enables a selected image in a plurality of images to be discriminated from the others" (paragraph 78). It does however neither disclose nor suggest the use of the thumbnail itself as a discrimination data and does even lead the reader in another direction ("Such discrimination data for searching images may be prepared in the image server and sent to the digital camera", paragraph 78).

D2 discloses a pure peer-to-peer network without server and does not indicate that the peer who retrieves the original data related to the thumbnail data item it has

received from another peer, attaches said thumbnail to his request to the other peer.

D3 mainly differs from the disclosure of claim 1 in that the client station does not have any thumbnail and sends a request containing terms to the central station to get thumbnails and then high resolution of interest contained on other peers.

D4, resp. D5, mainly differs from the disclosure of claim 1 in that the client station does not transmit a thumbnail to the center station but an object, resp. a pattern, to get an image containing this selected object, resp. pattern.

6. The subject-matter of independent **claim 14** corresponds in terms of method for the center station to that of claim 1. The above findings (Articles 33(2) and 33(3) PCT), therefore, also apply mutatis mutandis, to independent claim 14 and to the corresponding apparatus and computer program **claims 3 and 17**.

Re Item VII

Certain defects in the international application

1. The independent claims are not in the two-part form in accordance with Rule 6.3(b) PCT.
2. The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
3. To meet the requirements of Rule 5.1(a)(ii) PCT, the documents D1 and D2, which appear to represent the most relevant prior art, should have been identified in the description and their relevant contents should have been indicated.
4. The description is not in conformity with the claims as required by Rule 5.1 (a)(iii) PCT.

Re Item VIII

Certain observations on the international application

**INTERNATIONAL PRELIMINARY
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1. **Claims 12, 13, 15 and 16** lack clarity (Article 6 PCT) since the proper antecedents of "**the** other station" (claims 12, 13, 15, 16), "**the** original data item" (claims 13, 16) and "**the** comparison" (claims 13, 16) are missing.
2. The use of the term "stored in" in **claims 17-19** implies that the scope of protection of said claims is unclear (Article 6 PCT). The reader does indeed not know whether protection is searched for a computer program or for an information carrier.

CLAIMS

5 1. A digital document system in which a digital document in a communication network is shared between a plurality of stations, said system comprising:

- a first station having a first thumbnail data item and a corresponding original data item;
- 10 - a second station having a second thumbnail data item; and
- a center station comprising:
 - - comparing means for comparing the first thumbnail data item and the second thumbnail data item; and
 - transmitting means for transmitting information for accessing the
 - 15 original data item to the second station according to a result of the comparison.

2. A system according to claim 1, wherein said comparing means compares the first thumbnail data item and the second thumbnail data item by using a first signature of the first thumbnail data item and a second signature of the second thumbnail data item.

20

3. A center station communicated with a plurality of stations via a communication network comprising:

- comparing means for comparing a first thumbnail data item and a
- 25 second thumbnail data item, wherein the first thumbnail data item is in a first station and the second thumbnail data item is in a second station, and
- transmitting means for transmitting information for accessing an original data item corresponding to the first thumbnail data item to the second station according to a result of the comparison, wherein the original data item is
- 30 in the first station.

4. A station according to claim 3, further comprising:

- deriving means for deriving a first signature from the first thumbnail data item and a second signature from the second thumbnail data item;

- wherein said comparing means compares the first thumbnail data item and the second thumbnail data item by using the first signature and the
5 second signature.

5. A station according to claim 4, wherein said deriving means derives color histograms each based on the thumbnail data item as the signature.

10

6. A station according to claim 4, wherein said deriving means derives the signature by referencing a table.

7. A station according to claim 3, wherein said comparing means
15 compares based on a difference and a threshold derived from the first thumbnail data item and the second thumbnail data item.

8. A station according to claim 3, further comprising:

20

- receiving means for receiving a request from the second station;
- wherein the request includes the second thumbnail data item.

9. A station according to claim 3, wherein said communication network is a peer-to-peer network.

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10. A station according to claim 3, wherein the first station is a digital camera apparatus and generates the original data item.

11. A station according to claim 3, wherein the second thumbnail data item is generated in the first station.

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12. A station capable of sharing a digital document in a communication network comprising:

- i) original generating means for generating an original data item;
- ii) thumbnail generating means for generating a thumbnail data item from the generated original data item;
- iii) transmitting means for transmitting the thumbnail data item to the
- 5 other station; and
- iv) receiving means for receiving an access from said other station to the original data item based on the thumbnail data item.

13. A station capable of sharing a digital document in a
10 communication network comprising:

- 1) thumbnail receiving means for receiving a second thumbnail data item from the other station; and
- 2) original receiving means for receiving, from a center station, information for accessing the original data item corresponding to a first
15 thumbnail data item according to a result of the comparison between the first thumbnail data item and the second thumbnail data item.

14. A method of controlling a center station capable of communicating with a plurality of stations via a communication network
20 comprising the following steps:

- comparing a first thumbnail data item and a second thumbnail data item, wherein the first thumbnail data item is in a first station and the second thumbnail data item is in a second station; and
- transmitting means for transmitting information for accessing an
25 original data item corresponding to the first thumbnail data item to the second station according to a result of the comparison, wherein the original data item is in the first station.

15. A method of controlling a station capable of sharing a digital
30 document in a communication network comprising the following steps:

- generating an original data item;

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- generating a thumbnail data item from the generated original data item;

- transmitting the thumbnail data item to the other station; and

- receiving an access from said other station to the original data item
5 based on the thumbnail data item.

16. A method of controlling a station capable of sharing a digital document in a communication network comprising the following steps:

- receiving a second thumbnail data item from the other station; and

10 - receiving, from a center station, information for accessing the original data item corresponding to a first thumbnail data item according to a result of the comparison between the first thumbnail data item and the second thumbnail data item.

15 17. A computer program stored in an information carrier, said program comprising instructions enabling the implementation of a processing method according to claim 14, when that program is located and executed by a computer system.

20 18. A computer program stored in an information carrier, said program comprising instructions enabling the implementation of a processing method according to claim 15, when that program is located and executed by a computer system.

25 19. A computer program stored in an information carrier, said program comprising instructions enabling the implementation of a processing method according to claim 16, when that program is located and executed by a computer system.

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